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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,265	07/11/2003	Ronny Skauen	BPA-116	3941
20028	7590	08/23/2007		
Lipsitz & McAllister, LLC 755 MAIN STREET MONROE, CT 06468			EXAMINER HOANG, ANN THI	
			ART UNIT 2836	PAPER NUMBER
			MAIL DATE 08/23/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/618,265

Applicant(s)

SKAUEN, RONNY

Examiner

Ann T. Hoang

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 22-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 22-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 December 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fadeley et al. (US 6,234,100) in view of Ratzel et al. (US 4,477,753), Yang (US 5,661,625) and Tyler et al. (US 4,027,202).

Regarding claim 23, Fadeley et al. discloses a boat thruster control system for controlling an electric thruster motor for a thruster (16), said motor connected via a switch (92) to a supply voltage source (12 VDC), said thruster control system comprising:

a manually operated control means (20) for commanding the motor to drive the thruster (16) to selectively move the boat (10) in a port direction or a starboard direction;

said manually operated control means (20) providing one of a first control signal or a second control signal respectively representing one of said port direction or said starboard direction;

said first and said control signals controlling said switch (92) for actuating first and second contactors (94, 96) for making said motor run in a first or second direction respectively.

See Figs. 1A and 4, 4:50-57, and 8:14-23. The reference does not specify that switch (92) is an operating relay having first and second relay windings for actuating first and second relay contacts. The reference also does not disclose a safety control device as claimed.

However, Ratzel et al. discloses safety control device having a motor (14) connected via an operating relay to a supply voltage source (17), said operating relay having first and second relay windings (15, 16) for actuating first and second relay contacts (18, 19) for making said motor (14) run in a first or second direction, respectively. See figure. It would have been obvious to one of ordinary skill in the art at the time of the invention to replace the switch of Fadeley et al. with the operating relay of Ratzel et al. in order to provide simple and effective control means for running the motor in each direction via separate control signals for each direction, and since running motors via operating relays is well known and expedient in the art.

Yang discloses that drops in the supply voltage source (P0) for a DC motor (M201) may damage transistor components (Q100) in the motor control system. See Figs. 1-2 and 1:32-39.

Tyler et al. discloses a first monitoring device (292) for monitoring a supply voltage from a supply voltage source for a motor (10); and

a safety control device (86) adapted for delaying a re-excitation of said motor (10) after a break if said monitored voltage from said first monitoring device is too low.

During low supply voltage after a break, the supply voltage is disconnected from the motor system. See abstract, Figs. 1 and 2B, 1:42-61, 7:48-51, and 9:48-62. Since

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Yang discloses that it is desirable to protect transistor components of a DC motor system from damage associated with low supply voltages, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the first monitoring device and safety control device of Tyler et al. into the boat thruster control system of Fadeley et al. in view of Ratzel et al. in order to provide a safety control device for a boat thruster control system that prevents start-up of the motor too soon after shut-down, thereby protecting transistors in a DC motor system from damage associated with low supply voltages after a break. The combination would avoid chattering and burning of the relay contacts by preventing start-up of the motor when said monitored voltage was too low to maintain said relay in a stable pick-up state.

Furthermore, Ratzel et al. also discloses one or more second monitoring devices for continuously monitoring a state of said first and second relay contacts (18, 19); and a safety control device (34) adapted for continuously comparing control signals (10, 11) to the operating relay with signals from said one or more second monitoring devices to determine whether one of said first or second relay contacts (18, 19) is erroneously activated to run the motor (14) in either said first or second direction, and, if one of said first or second relay contacts (18, 19) is erroneously activated, actuating the other of said erroneously activated first or second relay contacts (18, 19) to supply the same voltage level to both terminals of the motor (14), thereby interrupting the current to the motor (14).

See abstract, figure, 1:48-55, 3:41-60, and 4:5-26. It would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the one or more

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second monitoring devices and safety control device of Ratzel et al. into the boat thruster control system discussed above in order to provide a safety control device for a boat thruster control system that prevents the motor from being energized in case of the relay contacts being stuck or welded, thereby protecting the motor.

Regarding claim 24, Fadeley et al. discloses that said control means (20) comprises a joystick. See Fig. 4 and 4:50-57.

Regarding method claims 22 and 25, the recited method steps would necessarily be performed in the usage of the above-mentioned safety control device for a boat thruster control system.

### ***Response to Arguments***

3. Regarding Applicant's argument, see pages 6-8 of remarks filed 06/21/07, that applying the system of Ratzel et al. to a thruster control system would not provide the advantage of being able to operate the motor in the direction of the failed relay because both input terminals are constantly forced to a high level by the logical circuit (34), Examiner asserts that, despite this observation, Ratzel et al. in combination with the other references still fulfills the claim limitations. For instance, Ratzel et al. discloses that if one of said first or second relay contacts (18, 19) is erroneously activated, the other of said erroneously activated first or second relay contacts (18, 19) is actuated to supply the same voltage level to both terminals of the motor (14), thereby interrupting current to the motor (14). See 3:41-60.

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4. Regarding Applicant's argument, see page 9 of remarks filed 06/21/07, that Tyler et al. is directed to protecting an AC motor or device against low line voltage and applying a delay before re-excitation of the AC motor, but that a DC thruster motor would not be damaged by low DC voltage levels, this argument has been fully considered and is persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Fadeley et al. in view of Ratzel et al, Yang and Tyler et al. (US 4,027,202). Yang discloses that drops in the supply voltage source (P0) for a DC motor (M201) may damage transistor components (Q100) in the motor control system and provides motivation to apply the first monitoring device and safety control device of Tyler et al. to a DC motor system.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Carlson et al. (US 3,911,341) discloses low voltage protection means for a DC motor system.

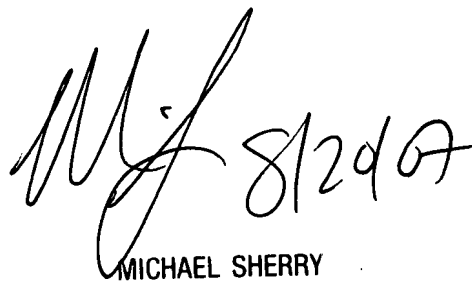
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ann T. Hoang, whose telephone number is 571-272-2724. The examiner can normally be reached Monday-Thursday and every other Friday, 8 a.m. to 6 p.m.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry, can be reached at 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ATH  
08/20/07

A handwritten signature in black ink, appearing to read 'MS 8/20/07', is written over the printed name and title of Michael Sherry.

MICHAEL SHERRY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800